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THE BOOK OF ABSTRACTS

**XII MEĐUNARODNA KONFERENCIJA O DRUŠTVENOM I
TEHNOLOŠKOM RAZVOJU – STED 2023**

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The authors have full responsibility for the originality and content of their own papers.

AMINO ACID PROFILES OF CEREALS

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ABSTRACT

Cereals play a key role to satisfy the global food demand of a growing population, especially in developing countries where cereal-based food production is the only predominant source of protein and energy. The quality of protein of cereals is based on their amino acid composition, especially on the content and availability of essential amino acids. The aim of this study was to analyze the chemical composition and amino acid profiles of different cereals, such as barley, maize, oat, rice, rye and wheat, that are important for nutritional purposes in human diet. The content of protein, moisture and crude fat in cereals varied significantly from 7.83 to 13.22 %, 11.45 to 13.80 %, and from 1.67 to 6.35 %, respectively. The obtained results showed that oat had the highest contents of crude protein (13.22 %), crude fat (6.35 %) and crude cellulose (9.42 %) compared to other cereals. Significant ($p < 0.05$) variation existed in the content of essential and nonessential amino acids among samples with the highest level in oat and wheat. Essential amino acids accounted for one-third of the total amino acids in the tested cereals. Glutamic acid was found to be the most abundant amino acid. Although lysine is the limiting amino acid for all cereals, the amount varies among species, being highest in oat and lowest in maize and rice. It could be concluded that the amino acid composition of oat is the most favorable among cereals due to its high protein content and the content of lysine which can be found in limited amounts in most of the cereals.

Keywords: cereals, amino acid profiles, chemical composition.

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